

NEXTREME
9085



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Jose V. Chen
Group Art Unit: 3637
Application No.: 10/798,932
Filed: March 11, 2004
Applicant: Scott Arthur William Muirhead
Title: THERMOFORMED PLATFORM

DECLARATION UNDER 37 C.F.R. 1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Scott A.W. Muirhead hereby deposes and says:

1. I reside at 16042 12th Avenue, Surrey, British Columbia, Canada.
2. I have been a practitioner within the thermoforming industry for twenty-five years and have been an owner of one or more thermoforming companies for nineteen years.
3. I am principal of Nextreme, L.L.C., the assignee of the above-identified application.
4. I am also the sole inventor of the above-identified application.
5. U.S. Patent No. 6,006,677 ("the Apps patent") does not include the phrase "a fire resistant layer formed upon an exterior of the pallet assembly." In fact, the Apps Patent does not even include the words "fire", "flame" or any equivalent.

6. The Apps patent does not teach a plastic pallet having a fire resistant layer because the Apps patent states that the plastic pallet is "fabricated from just one type of material." See Col. 2, lines 30-34. The single material is scuffed to form an anti-slip layer from the same base material.

7. The Examiner's statement that "plastics including thermoplastic material provide a fire resistant layer" is inconsistent with the problems encountered by industry and the fire community. It was discovered that fire suppression equipment in warehouses designed to code to extinguish wood pallet fires were incapable of extinguishing polyolefin pallet fires due to their increased intensity when they occur. This led to the promulgation of a new UL classification for plastic pallets of any kind that have the burning characteristics of wood and can be contained by NFPA 213 fire suppression equipment.

8. The brochure entitled "Fire and Polyvinyl Chloride" ("the Vinyl Institute Reference") indicates that polyolefin materials, including polyethylene and polypropylene, exhibit comparably high average peak release rates, when measured according to ASTM E1354 tests, against other materials including wood. It is shown polyethylene for example has a burn rate that is substantially equivalent to twice that of wood.

9. The Examiner's observation that PVC tends to have excellent fire performance properties is irrelevant to the problem of the fire performance properties of polyethylene and polypropylene in the material handling environment.

10. A person of ordinary skill in the art knows that PVC pallets can not be used in low temperature environments because of low impact strength. PVC pallets are rarely widely used for this reason.

11. PVC also releases halogens when burned, which is undesirable.

12. U.S. Patent No. 6,228,914 ("the Ford patent") discloses applying a fire resistant layer to a product after molding. The intumescent composition disclosed in the Ford Patent cannot be co-extruded and molded.

13. The Ford patent states "[t]his material has a relatively low onset intumescent temperature which means that it will commence exfoliation generally after only a few seconds of exposure to an elevated temperature." Therefore, it would be impossible to modify the structure of U.S. Patent No. 5,845,588 ("the Gronnevik patent") by including the material layer taught by Ford because the combination would not survive high temperature extrusion and thermoform molding.

14. In 2000, I conducted a thorough patent search for prior art related to the preparation of co-pending patent application 60/286,450, entitled "High Performance Fuel Tank", which was filed April 27, 2001. During the search I discovered Abu-Isa patent 5,834,535.

15. In January 2001, I began working on a research project to develop an extrudable intumescent material for polyolefin.

16. As part of the research project, I cut several 4" x 4" chips from a sheet of extruded halogen free BA50100 polyethylene supplied by Primex Plastics of Richmond, Indiana.

17. The chips were sent to Delphi Corporation of Sterling Heights, Michigan. There, I collaborated with Mr. Abu-Isa to laminate the intumescent material that is disclosed in U.S. Patent No. 5,834,535, and cited in the instant application onto the chips (to simulate co-extrusion).

18. The laminated chips were sent to Chep USA, Inc. of Orlando, Florida. There, I collaborated with Mr. Torrey to test the samples according to ASTM E1354. The test results are shown in Figure 1 attached hereto.

19. The test results for the samples tested in Figure 1 were unexpected because average peak heat release rate (Peak HRR) was 203 KW/m^3 , which is less than one half of the average Peak HRR of wood using an equivalent heat flux. The test results shown in Figure 1 for the samples were superior because a relatively thin layer of comparably expensive intumescent material prevented the underlying structural layer of comparably low cost polyolefin material from igniting during the tests performed. The samples tested comprised a combination of materials in co-extrusion form that could be thermoformed having a 4:1 draw ratio suitable for molding the deep leg pockets of a pallet structure.


20. The patent record shows that Abu-Isa and Torrey subsequent to the collaboration filed U.S. Patent Application Nos. 10/890,351 and 10/045,696 on February 4, 2004 and October 24, 2001, respectively. The instant application is a continuation of application No. 09/803,681 filed March 12, 2001. During the examination of the Torrey application '696 and the Abu-Isa application '351, applicants failed to provide the Office with information contained in publication 2001/0029874 and the instant

application. The information contained in these references are relevant to the patentability of the claims that have been allowed by the Office.

21. In the Office action dated 7/23/2007 the Examiner states: "Further, there is no nexus between the merits of the claimed invention and the evidence of the secondary considerations; 2) there is no factual evidence of the stated opinions, such as testing results". Therefore, in this Declaration I have also identified the linkages between the discovery of Abu-Isa patent '535, the origins of the invention contained in Torrey application '696, and the origins of the invention contained in Abu-Isa application '351, Additionally, with Figure 1 I am providing factual evidence in the form of test results.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1000 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

Oct 5, 2007
Date



Scott A.W. Muirhead

ASTM E1354 Test Data Summary
CHEP International

Material Number	Ignition Time (sec)	Flame Duration (sec)	Initial Weight (grams)	Total Weight Loss (grams)	% Weight Loss	Heat of Comb (mJ/g)	Avg HRR at 180s kW/m	Peak HRR kW/m	Time of Peak HRR (sec)	Total Heat MJ/m	Total Smoke kg/m
1	66	402	24.5	23	71.8	21.7	149	237	24	48.9	2550
2	72	391	24.5	22.1	74.8	21.3	208	208	26	47	2030
3	74	413	20.3	22.4	74	21.5	163	163	38	44.1	2443
Average	77	404	21.8	22.5	75.5	21.5	203	203	28	48.3	2188

CS-M00-01

Material tested on 8 March 2001
Material labeled as followed
#1-HDPE with Intumescent Flame Retardant
Note: Materials tested at 32 KW/m exposure, horizontal with spark igniter



Figure 1